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Subject
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the apparatus comprising framing circuitry programmed to employ the at least one field for transmission of selected payload data.

B2
21. (Amended) A high data rate digital subscriber line (HDSL) data frame embodied in a carrier wave and comprising a plurality of overhead fields and a plurality of payload fields, each of the payload fields having at least one additional field associated therewith for implementing a feature relating to one of T1 and E1 transmission protocols, wherein the at least one additional fields are used for transmitting payload data on a single-line digital subscriber line (SDSL).

22. (Amended) The HDSL data frame of claim 21 wherein the at least one additional field comprises an F/Z bit field.

REMARKS

Claims 1-16 and 19-22 are currently pending in the application. The allowability of claims 1-16 was withdrawn. Claims 1-16 and 19-22 were rejected. Claims 19, 21, and 22 have been amended.

The Examiner rejected claims 21 and 22 under 35 U.S.C. 101 as not being directed to statutory subject matter. Claims 21 and 22 have been amended to more clearly recite the invention and not for any reason related to patentability. In addition, the rejection is respectfully traversed.

Claims 21 and 22 are directed toward an HDSL frame format, i.e., a data structure, embodied in a carrier wave. Carrier waves have been explicitly recognized as computer-readable media as exemplified by PTO training materials. The current examining guidelines for such inventions can be found at <http://www.uspto.gov/web/offices/pac/dapp/oppd/pdf/compenex.pdf>.

Specifically, please refer to the guidelines discussed with reference to claim 13 of that example. In that example, carrier waves are explicitly acknowledged as computer-readable media in which statutory subject matter may be embodied (see note 3 in the Table Notes for Claim 13).

Moreover, in the case of *In re Lowry*, 32 USPQ 1031, the Court of Appeals for the Federal Circuit recognized that data structures embodied in computer-readable media are patentable subject matter. See also MPEP section 2106 IV.B.1.(a). which states that “a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.” An example of such a functional interrelationship is the use of the recited “at least one additional field” to transmit payload data on an SDSL.

Because claims 21 and 22 recite a class of statutory subject matter, and because the necessary interrelationships between the recited data structure (i.e., the HDSL frame) and the computer-readable medium (i.e., the carrier wave) are explicitly identified in claim 21, the rejection is believed overcome.

The Examiner rejected claim 20 under 35 U.S.C. 112, first paragraph as not being supported by the specification. The rejection is respectfully traversed.

Support for the computer-readable medium of claim 20 is inherent in the specification and may be inferred with reference to the section beginning at page 5, line 34, in which some examples are provided of the chips sets upon which the framing circuitry of the present invention may be based. The ensuing description then discusses how the “flexible programmable features” of the framing circuitry are employed to implement the invention. As would be understood by one of ordinary skill in the art, the framing circuitry of the present invention (as exemplified by the well known chips mentioned) includes associated memory, i.e., at least one computer readable medium, for employing such programmable features in the manner described. Thus, the present

specification provides support for the at least one computer-readable medium of claim 20.

The Examiner rejected claim 19 under 35 U.S.C. 112, first paragraph for containing subject matter of undue breadth. Claims 19 has been amended to recite framing circuitry rather than a single means-plus-function limitation. The rejection is believed overcome thereby.

The Examiner rejected claims 1, 2, 5, 8, 9, 11, 14, and 19-21 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,246,695 (Seazholtz). The Examiner also rejected claim 20 under 35 U.S.C. 103(a) as being unpatentable over Seazholtz. The rejections are respectfully traversed.

The invention of claim 1 relates to using a field in an HDSL frame format having an intended purpose (i.e., implementing a feature relating to the T1 or E1 transmission protocols) for another purpose (i.e., the transmission of payload data) in an SDSL transmission. The portions of the cited reference to which the Examiner referred do not even remotely suggest such a feature. Rather, at column 10, lines 30-36, Seazholtz simply refers to the fact that a conventional ASDL system may simultaneously supply high speed video data and conventional telephone service on a copper subscriber loop. And, at column 6, lines 38-48, Seazholtz provides a high level and conventional description with reference to Fig. 1 of how a local area network (LAN) 30 communicates with other wide area network devices via interfaces 34 and 36 which may be any of a pair of T1 Mux, HDSL, or ADSL/AVR interfaces.

In these sections of the reference, there is no discussion of any of the fields in the HDSL frame format, much less the use of any of the fields in the manner recited in claim 1. Therefore, Seazholtz cannot be said to anticipate or obviate such features. For at least these reasons, neither can Seazholtz be said to anticipate or obviate any of claims 2, 5, 8, 9, 11, 14, and 19-21.

The Examiner indicated that claims 3, 4, 6, 7, 10, 12, 13, 15, and 16 would be allowable if amended to be in independent form. The Applicants respectfully acknowledge the Examiner's indication of allowability. However, in view of the foregoing discussion, the Applicants believe

the claims to be allowable in their current form.

In view of the foregoing, Applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (510) 843-6200.

Respectfully submitted,
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Appendix I: Amended claims with markings indicating the changes made

19. (Amended) An apparatus for transmitting data in a network between first and second single-line digital subscriber line (SDSL) modems using a standard high data rate digital subscriber line (HDSL) frame format, the frame format including at least one field in each data payload block for implementing a feature relating to one of T1 and E1 transmission protocols, the apparatus comprising framing circuitry programmed to [means for] employ[ing] the at least one field for transmission of selected payload data.

21. (Amended) A high data rate digital subscriber line (HDSL) data frame [computer data signal] embodied in a carrier wave and [representing a high data rate digital subscriber line (HDSL) data frame] comprising a plurality of overhead fields and a plurality of payload fields, each of the payload fields having at least one additional field associated therewith for implementing a feature relating to one of T1 and E1 transmission protocols, wherein the at least one additional fields are used for transmitting payload data on a single-line digital subscriber line (SDSL).

22. (Amended) The HDSL data frame [computer data signal] of claim 21 wherein the at least one additional field comprises an F/Z bit field.